THE GOLDEN GOOSE AWARD

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GOLDEN GOOSE AWARD: SCIENTISTS' CURIOSITY ABOUT ALTITUDES WHERE PEOPLE LIVE HAS LED TO ADVANCES IN CANCER AND OTHER RESEARCH, SEMICONDUCTOR MANUFACTURING, FOOD MARKETING

Interdisciplinary Researchers Who Pioneered Hypsographic Demography Will Receive Golden Goose Award at Library of Congress Ceremony on September 17

For their visionary interdisciplinary research on the altitudes where people live, and their work's wide-ranging impacts on society, Drs. Joel E. Cohen and Christopher Small have been selected as the third winners of the 2015 Golden Goose Award, the award's founders announced today. They will be honored, along with the two other teams of researchers, at the fourth annual Golden Goose Award Ceremony at the Library of Congress on September 17.

Cohen, a mathematical population biologist, and Small, a geophysicist, were simply pursuing a shared curiosity with support from the National Science Foundation (NSF) when they produced the first global study of "hypsographic demography," how human populations are distributed with respect to altitude. Their work has had an unexpectedly broad impact, touching areas as diverse as food production and packaging, semiconductor manufacturing, and cancer and other biomedical research and development.

The Golden Goose Award honors researchers whose federally funded work may have seemed odd or obscure when it was first conducted but has resulted in significant benefits to society.

"Who knew your bath soap might work better in Miami than Denver? Turns out, altitude determines more about our lives than we thought," said Rep. Jim Cooper (D-TN), who had the original idea to create the Golden Goose Award. "If not for two curious scientists and federal funding, we might have missed key discoveries in manufacturing, medicine and more. We never know what the next breakthrough will be, but continued investment in research will help us get there."

"Federally funded science frequently results in unexpected benefits to people's day-to-day lives, as this year's winners demonstrate," said Rep. Randy Hultgren (R-IL), a member of the House Committee on Science, Space and Technology and a supporter of the Golden Goose Award since its inception in 2012. "Studying the distribution of humans worldwide by altitude has led to advancements in everything from disaster preparedness to the packaging of potato chips. Quirky-sounding science can lead to extraordinary discoveries in our understanding of human development and improve the lives of many. I'm thrilled to salute yet another Golden Goose winner."

Cohen and Small met in 1996, when Small, then a young geophysicist at Lamont-Doherty Earth

Observatory (LDEO) at Columbia University, attended a lecture by Cohen, a Rockefeller University mathematical population biologist. They quickly discovered a shared curiosity at the intersection of populations and the contours of Earth's surface and began working together at LDEO, with NSF support.

The primary driver of Cohen and Small's original research was to better understand the sizes and distributions of human populations living at low altitudes, where they face challenges due to rising sea levels and other natural disasters. They combined Small and his collaborators' new global map of Earth elevations—from the seafloor to the top of Mount Everest—with one of the first ever maps of Earth's human population on a standardized grid, to produce their global model of hypsographic demography. With it, they showed that over one-third of the world's population lives within 300 feet of sea level, and most of those people actually live in areas with lower population density than coastal cities like New York or Los Angeles—a realization with important consequences for disaster preparedness.

While they continued to deepen their analysis of these issues with crucial support from the NSF-funded University Corporation for Atmospheric Research, food giant Frito-Lay gave Small "the biggest surprise of his scientific career" when the company contacted him to express interest in the research. While Cohen and Small were focused on low-lying regions, Frito-Lay had its eye on high altitudes, where they were trying to determine if there were significant markets for its products. If there were, the company would need to develop packaging strong enough to withstand potentially big differences in air pressures between manufacture and the food's high altitude destination.

Frito-Lay was not the only company interested in the work. The pair have fielded inquiries from a number of companies, including Proctor & Gamble, whose soaps form and mix bubbles differently at different altitudes, and Intel, whose microchips cool more or less efficiently depending on air density and thus altitude. In fact, Cohen and Small's hypsographic demography research informs standards important to the cooling of microchips in today's personal computers.

However, the application of their work extends far beyond manufacturing. A wide range of research articles cite Cohen and Small's groundbreaking 1998 paper debuting hypsographic demography. The topics range from issues in ecology and biodiversity to modern LED lighting systems, and include a plethora of biomedical studies.

Cohen and Small are the third team of 2015 Golden Goose awardees. Earlier this year, the award founders announced that Walter Mischel, Yuichi Shoda, and Philip Peake would receive the award for their creation and development of the Marshmallow Test, and that David Hubel and Torsten Wiesel would receive the award for their pioneering work on neuroplasticity. All of the awardees will receive their honors on September 17 at the fourth annual Golden Goose Awards ceremony, which will take place in the Jefferson Building of the Library of Congress, in Washington, DC. Their stories and those of past years' winners can be found at the Golden Goose Award website.

About the Golden Goose Award

The Golden Goose Award is the brainchild of Rep. Jim Cooper, who first had the idea for the award when the late Senator William Proxmire (D-WI) was issuing the Golden Fleece Award to target wasteful federal spending and often targeted peer-reviewed science because it sounded odd. Rep. Cooper believed such an award was needed to counter the false impression that odd-sounding research was not useful.

In 2012, a coalition of business, university, and scientific organizations created the Golden Goose Award. Like the bipartisan group of Members of Congress who support the Golden Goose Award, the founding organizations believe that federally funded basic scientific research is the cornerstone of American innovation and essential to our economic growth, health, global competitiveness, and national security. Award recipients are selected by a panel of respected scientists and university research leaders.

Golden Goose Award Founding Organizations:

American Association for the Advancement of Science (AAAS)
Association of American Universities (AAU)
Association of Public and Land-grant Universities (APLU)
Breakthrough Institute
Progressive Policy Institute (PPI)
Richard Lounsbery Foundation
The Science Coalition (TSC)
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